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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,806	11/17/2003	Melissa A Petruska	S-100,641	5182

35068 7590 07/11/2006

LOS ALAMOS NATIONAL SECURITY, LLC  
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LOS ALAMOS, NM 87545

EXAMINER
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KUGEL, TIMOTHY J

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 07/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/715,806	PETRUSKA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Timothy J. Kugel	1712	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 May 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 9-18 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19-22 is/are allowed.
- 6) ☒ Claim(s) 1-8 and 23-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date: _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date: _____  | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. Claims 1-26 are pending as amended on 19 May 2006.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Election/Restrictions***

3. This application contains claims 9-18 drawn to an invention nonelected without traverse. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

### ***Double Patenting***

4. Applicant's amendment, filed 19 May 2006, with respect to changing the transitional language of independent claim 1 to "consisting essentially of" and limiting claim 19 to the alkoxysilane-terminated groups has been fully considered and overcomes the claims of the cited related applications.

The provisional rejection of claims 1, 2, 5-8 and 19-26 under the judicially created doctrine of obviousness-type double patenting over claims 1, 2, 4, 5, 11, 12, 17, 18, 21, 22 and 25 of copending Application No. 10/715,733 has been withdrawn.

### ***Claim Rejections - 35 USC § 102 and/or 35 USC § 103***

5. Applicant's amendment, filed 19 May 2006, with respect to limiting the terminal groups in claim 19 to alkoxysilane has been fully considered and overcomes the prior art.

The rejection of claims 19-22 under 35 USC 102(b) as being anticipated by US Patent Application Publication 2002/011080 (Barney hereinafter) has been withdrawn.

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6. Claims 1-6 and 23-26 stand rejected under 35 U.S.C. 102(b) as being anticipated by Barney.

Barney teaches colloidal nanocrystals, a solid composite including nanocrystals and a process of making a solid composite including nanocrystals comprising mixing nanocrystals—including ZnS, ZnSe, ZnTe, CdS, CdSe, CdTe, HgS, HgSe, HgTe, AlN, AlP, AlAs, AlSb, GaN, GaP, GaAs, GaSb, InN, InP, InAs, InSb, TiN, TiP, TiAs, TiSb, PbS, PbSe and PbTe nanocrystals (¶¶0011 and 0022)—with a lower alcohol—ethyl alcohol, butyl alcohol and isopropyl alcohol (¶0032)—a non-polar solvent—including 1,1,1-trichloroethane, dichloromethane and cyclohexane (¶0032)—and a sol-gel precursor—such as silicon alkoxide, titanium alkoxide or zirconium alkoxide (¶0031)—at ratios of 5:1 to 10:1 of the nanocrystal solution to the binder (¶0042) and forming a solid matrix containing the nanocrystals (¶0031).

7. Claims 7 and 8 stand rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Barney.

Barney teaches colloidal nanocrystals, a solid composite including nanocrystals and a process of making a solid composite including nanocrystals comprising mixing nanocrystals—including ZnS, ZnSe, ZnTe, CdS, CdSe, CdTe, HgS, HgSe, HgTe, AlN, AlP, AlAs, AlSb, GaN, GaP, GaAs, GaSb, InN, InP, InAs, InSb, TiN, TiP, TiAs, TiSb, PbS, PbSe and PbTe nanocrystals—with a lower alcohol—ethyl alcohol, butyl alcohol and isopropyl alcohol—a non-polar solvent—including 1,1,1-trichloroethane, dichloromethane and cyclohexane—and a sol-gel precursor—such as silicon alkoxide, titanium alkoxide or zirconium alkoxide— at ratios of 5:1 to 10:1 of the nanocrystal

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solution to the binder and forming a solid matrix containing the nanocrystals as detailed above.

Since Barney teaches the same composition as claimed, one of ordinary skill in the art at the time the invention was made would have expected that the transparency of the sol-gel host and the uniformity of the dispersion of nanocrystals of the Barney composition would inherently be the same as claimed.

Where applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 U.S.C. 102 and 103. "There is nothing inconsistent in concurrent rejections for obviousness under 35 U.S.C. 103 and for anticipation under 35 U.S.C. 102." *In re Best*, 562 F.2d 1252, 1255 n.4, 195 USPQ 430, 433 n.4 (CCPA 1977).

### ***Response to Arguments***

8. Applicant's arguments filed 19 May 2006 have been fully considered but they are not persuasive.

Applicant argues that amending claim 1 from "comprising" to "consisting essentially of" overcomes Barney as prior art as Barney teaches tris-hydroxypropyl phosphine as an essential component that becomes incorporated into the composition taught (Barney ¶0041); however, applicant shows no evidence and Barney makes no teaching that the tris-hydroxypropyl phosphine of Barney is anything more than a cosolvent with the tetrahydrofuran and ethyl alcohol.

***Allowable Subject Matter***

9. Claims 19-22 are allowed.

***Conclusion***

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Kugel whose telephone number is (571) 272-1460. The examiner can normally be reached 6:00 AM – 4:30 PM Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

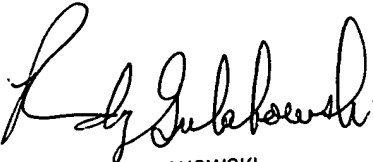
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published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TJK  
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